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REMARKS

Claims 1-29 remain in the application.

Claims 1, 7, 13, 16-19, and 21 have been amended.

The objections to the claims and §112 rejection have been obviated by amendments to claims 13, 16, 17, 18 and 19.

Claims 1-6, 9 and 10 were rejected under §103(a) as unpatentable over Hadwin in view of Bender.

Hadwin discloses an electrical probe with a spring biased pin 26 reciprocating in a spring-loaded sheath 28. An electrical component 34 is connected to the rear end of the sheath (away from the pin end), with the component providing a serial connection between the sheath and a transmission line 18. The electrical component is not part of nor directly connected to the pin, nor part of the sleeve. A non-conductive sleeve 32 mechanically receives and supports the pin-sheath and component.

Bender discloses an electrical probe with a fixed elongated tip 16 that extends well beyond a metal sleeve 15a to which it is fixed. The sleeve extends beyond a housing nose portion 12, which is said to optionally include electrical components connected to the tip, and to a pin extending to circuitry. Although the component is not illustrated, it is implicit that the component is connected to the rearmost end of the tip element, which is fixed with respect to the housing body.

The §103 rejection of claim 1 is in error for several reasons. First, neither reference discloses certain claimed features; even if combined, the references would not lead to the claimed invention. Second, the rejection lacks adequate motivation to make the proposed combination. Third, the proposed combination appears to be based only in hindsight.

Claim 1 has been amended to clarify that the pin is axially movable within the sleeve, and the electrical component reciprocates with respect to the sleeve. Both cited references disclose a component connected to the rear end of a fixed tip element. In the case of Hadwin, the fixed element also includes an extending spring pin; in Bender, the tip is simply a single solid metal conductor. The action asserts that Bender discloses a component serially intervening between a tip and pin end. However, this is an immovable component, and is not received in a conductive sleeve as claimed. Neither cited reference discloses the concept of a movable pin having an electrical component, let alone the component serially intervening between ends of the pin element. In the cited references, the components serially intervene

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only between the rear end of a fixed tip element and the forward end of a conductor connected to an extending cable. Thus, the cited references disclose only fixed, immovable components, not movable components. Accordingly, because none of the cited references disclose a reciprocating pin containing an electrical component as claimed, claim 1 should be allowable.

Claim 1 should be allowable for the additional reason that even if the cited references were combined, they would not lead to the claimed invention. If one were to seek to modify Hadwin based on the teachings of Bender, one might adopt any number of the features of Bender. However, none of these features would suggest moving the electrical component farther forward to the movable pin portion instead of the fixed location at the rear end of the tip conductor. Moreover, if Bender were modified based on Hadwin, the likely teaching would be to add a spring pin to the tip, and not to change the location of the electrical component from its fixed position at the rear end of the tip conductor.

Claim 1 should be allowable for the additional reason that the action's articulated motivation for the proposed combination is inadequate and unsupported by the references. The asserted motivation is "to minimize stay (sic - 'stray?') capacitance effects." However, neither reference supports this. Hadwin does not use the terms "stay" "stray" or "effect", and makes only a single reference to "capacitance" at column 3, line 17, to indicate the benefits of a capacitor at high frequencies to compensate for cable capacitance, with no suggestion that relocating the capacitor or any other component closer to the tip or on a movable pin would provide the alleged advantages. The Bender reference does not contain any of the four terms. Neither reference provides any suggestion that minimizing capacitance effects is desirable, nor that the proposed modification would provide any such benefits. In the absence of any suitable teaching or incentive to make the proposed combination, the rejection appears to be based in hindsight, and the alleged motivation is not drawn from the art or field of knowledge, but is a pro forma assertion without legal basis.

Claims 2-10 depend from claim 1 and should be allowable for the above reasons and because of the features set forth therein.

Claim 5 should be allowable for the additional reason that neither cited reference discloses an electrical component between a portion received in a (conductive) sleeve and the tip. Hadwin shows the component rearward of the sleeve and all portions of the pin, and Bender shows no conductive sleeve at all, and the component rearward of the entire fixed tip.

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Claim 9 should be allowable for the additional reasons that the art of record does not disclose the claim limitation that the pin portion forward of the component has a limited aspect ratio of less than double its diameter, and because there is no articulated motivation to adopt the radically different proportions claimed. This is not a mere matter of dimensional or design choice, but a significant departure from the lengthy pin portions of the cited references. Hadwin's movable pin is at least about 7-10 times as long as its diameter, and the entire conductive portion forward of the component is more than 10 times the diameter. Bender's exposed tip portion is at least about 5 times as long as its diameter, and any practical location of the component would appear to be at least about 20-60 times the pin diameter to the rear. The action does not state where either reference suggests an advantage or motivation to move the component closer to the tip, and to have a short tip portion forward of the component. Accordingly, the "optimum or workable range" suggested by the cited art is a tip length in the range of 10-60 times the diameter. Thus the claimed range of less than 2 is well outside normal ranges. For this additional reason, claim 9 should be allowable.

Claim 10 should similarly be allowable because the claimed dimensions appear to be well outside of the normal range as evidenced by the cited references. In addition, a major modification to provide the ratio of claim 9 or the length of claim 10 would require major design and structural changes beyond the capabilities of one with only routine skill in the art, and thus the references teach away from such a modification.

Claims 7 and 26 were rejected under §103(a) as unpatentable over Hadwin and Bender, and further in view of Calma. Even if the asserted flanges were in fact flanges, they are remote from the component 8, which is connected only in the broadest sense of a remote temporary electrical contact, and not an attachment. The claims has been amended to clarify this intended scope, in that the component is between the flanges. Moreover, the office action fails to articulate any motivation to modify Hadwin or Bender to provide flanges.

Claims 11, 12, 14, and 17 were rejected under §102(b) as unpatentable over Calma. The rejection is in error when it asserts that Calma discloses "an electrical component 8 proximate to the tip and serially intervening between the tip and an opposed end of the pin." In fact, the asserted component 8 of Calma is beyond the tip 18 of Calma's pin 19 and that pin's end (31) opposite the tip, and there is no component between the ends. The cited Calma component does not serially intervene. For this reason, claim 11 should be allowable.

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Claims 12-20 depend from claim 11 and should be allowable for the above reasons and because of the features set forth therein.

Claim 12 should be allowable for the additional reason that the pins of Calma do not extend beyond the periphery, as asserted in the action. The body 4 asserted as the board appears to have a periphery (not shown) that extends well beyond the ragged right and left edges shown in Fig. 2 of Calma. And Calma's pins do not extend laterally toward or even near the periphery, let alone beyond it. The pins extend perpendicularly to the plane of the body, so that no amount of extension will project them beyond any possible body periphery. Applicant is using the language "extends beyond the periphery" in the conventional sense that an element does not extend beyond the periphery of a planar surface unless it extends laterally beyond the edge of the surface. Similarly, a tree does not extend beyond the periphery of a property simply by growing upward, but only if a limb extends laterally to overhang beyond the property line.

Claims 13, 15, and 16 were rejected under §103(a) as unpatentable over Calma in view of Bender. The rejection is in error because the asserted motivation (the same as claim 1) is inadequate for the reasons discussed above with respect to claim 1. Claim 15 should be allowable for the additional reasons discussed above with respect to claim 5, in that the Bender teaching is to position a component rearward of the entire tip, and not between front and rear portions.

Claim 18 was not rejected, and should be allowable for the reasons discussed above with respect to claim 9.

Claim 19 was rejected under §103(a) as unpatentable over Calma in view of Bender and further in view of Hadwin. First, given the amendment to clarify that the distance referred to is that between the component and the tip, this distance in Hadwin is longer than the pitch. Moreover, the Hadwin device has essentially only one probe having a component, so that the "plurality" limitation is not disclosed, and thus the distance from a ground plane contact lacking a component is not properly a "pitch".

Claim 21-23 were rejected under §102(b) as unpatentable over Hadwin. Claim 21 has been amended to clarify that the pin is electrically connected to the sleeve, in contrast to the grounded metal receptacle 44 of Hadwin. Accordingly, and for the above reasons discussing movable pins having electrical components, claim 21 should be allowable.

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Claims 22-29 depend from claim 21 and should be allowable for the above reasons and because of the features set forth therein.

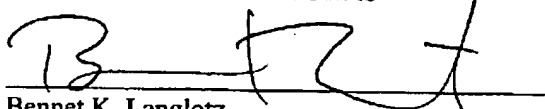
Claims 24, 25, 28, and 29 were rejected under §103(a) as unpatentable over Hadwin in view of Bender (as were claims 1 et al.) The rejection is traversed for the reasons discussed above with respect to claim 1, in that the asserted motivation is inadequate. In addition, the rejection of claim 24 is traversed for the additional reasons discussed above with respect to claims 5 and 15, in that the Bender and Hadwin teaching is to position a component rearward of the entire tip, and not between front and rear portions.

Claims 28 and 29 should be allowable for the reasons discussed above with respect to claims 9, 10, and 18.

Claim 26 should be allowable for the reasons discussed above with respect to claim 7.

The application should now be in condition for allowance. Reconsideration of the application is respectfully requested.

Respectfully submitted,
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